# West African Electricity Sector Integration

**State of Progress**
**and Future Challenges**
**for the West African Power Pool**

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## Introduction

The West African Power Pool (WAPP) continues to thrive in its early years, with national electricity sector officials from 14 countries of the Economic Community of West African States (ECOWAS) working together to create a regional market for electricity. Important steps have been taken to promote investor security and permit investors to realize economies of scale by producing for a larger regional market. For example, the ECOWAS Energy Protocol provides a legal framework for energy sector investment and trade guaranteeing such promising key principles as "open access" and "free trade" within West Africa. The creation of the first of the permanent WAPP bodies, the ECOWAS Energy Information Observatory, should provide a focal point for both system operation and as a source of information for interested investors. This paper resumes the progress achieved to date by the WAPP and outlines some of the next steps to be taken in creating a regional West Africa electricity market.

Consistent with the NEPAD emphasis on infrastructure and poverty reduction, the WAPP is addressing the needs of the poorest member states by bringing to greater maturity a half-dozen priority projects within Zone B of the WAPP.[1] Finding foreign and local investors to finance these projects is now an immediate concern. The expected fast rates of growth in electricity demand by industry, services and consumers throughout the region could be one of the most appealing aspects of the WAPP for foreign and local investors. Yet energy sector investment in West Africa is hampered by the relatively discouraging overall investment climate, as evidenced by such factors as risk, credit-worthiness, and the ease of doing business. The WAPP's recent steps towards improving security for energy sector investment represent important progress, but there remains substantial room for improvement.

## Institutional Arrangements for the WAPP

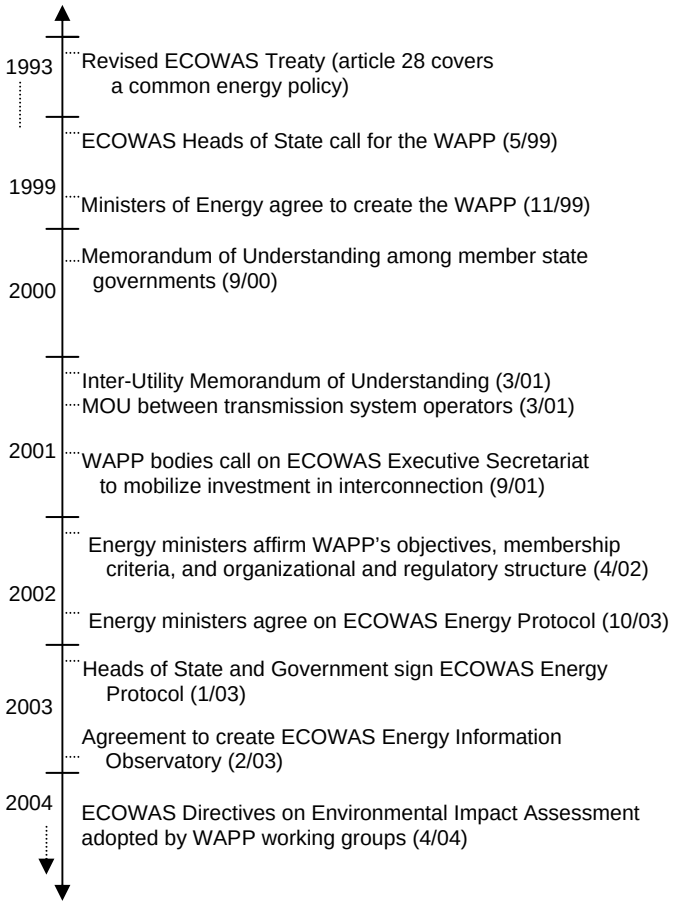
The WAPP is an African-led and African-created institution. In November 1999, the ECOWAS ministers of energy, meeting in Accra, Ghana, agreed to create the WAPP and gave the ECOWAS Executive Secretariat the task of shepherding the WAPP along during an initial transition phase. Earlier that year, the ECOWAS Council of Ministers approved the formulation of the ECOWAS Master Plan for the development of energy production facilities and interconnection of the national electricity grids.[2] The timeline in Figure 1 shows a selected number of key events along the way for the WAPP.

There are two types of WAPP priority projects, those dealing with electricity generation and the others with interconnection, or the construction of transmission lines running across international borders. To make the list, these priority projects must have a regional character. In the Master Plan, the projects were split into Phase I projects that had reached the implementation stage, while Phase II projects required further work, for

[1] Zone A countries include Benin, Burkina Faso, Côte d'Ivoire, Ghana, Niger, Nigeria and Togo. Zone B countries include The Gambia, Guinea, Guinea-Bissau, Liberia, Mali, Senegal and Sierra Leone.
[2] C/REG.7/12/99.

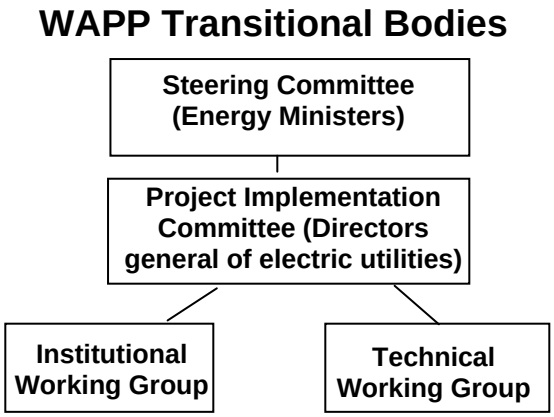
example the conducting of feasibility studies. Most of the Phase I projects are located in Zone A, with most Zone B projects in Phase II. The overall hope is that these integration projects will bring reliable electricity supply and high quality service at competitive prices to the population and economies of the region.

**Figure 1**
**Timeline of Key Events for the West African Power Pool**




Another important development came about in Lomé, Togo in September 2000, when the ECOWAS ministers of energy signed a Memorandum of Understanding which committed the signatory governments to the project. That meeting also created the WAPP transitional bodies, tasked with guiding the WAPP in its institutional development (Figure 2). These WAPP bodies have been meeting on a regular basis, with the working groups developing programmatic decisions and resolutions to pass up to the heads of the electric utilities and then up to the ministers for approval.

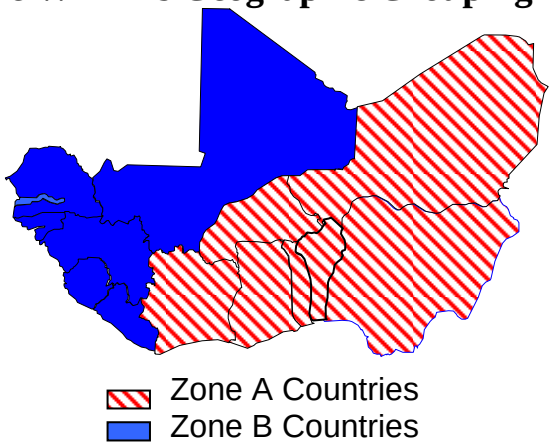
**Figure 2**




The Lomé meeting also resulted in the geographic grouping depicted in Figure 3, with the 14 WAPP countries evenly split into Zone A and Zone B. In the working groups, at least, the geographic grouping is useful for working sessions, as the respective chairmen for Zone A and Zone B assist in areas related to their zones.

**Figure 3**

**The WAPP's Geographic Grouping**




The Zone A countries are now nearly entirely interconnected, permitting electricity trading across borders with a minimum of negotiation and bureaucratic hassle. One frequent trading pattern is for electricity generated in Côte d'Ivoire to be transmitted to Ghana and Togo and even all the way to Benin.[3] The upcoming transmission link

[3] Côte d'Ivoire is estimated to have exported 1,563 GWh of electricity (worth about $77 million) in 2002, of which 111 GWh went to Burkina Faso and another 233 GWh was wheeled across Ghana to Togo and Benin. From its own generation, Ghana exported an additional 170 GWh of electricity to Togo and Benin in 2002.

between Nigeria and Benin will further reinforce the possibilities for trading within Zone A, and increase competition among suppliers.

In March 2001, two key Memoranda of Understanding were signed in Dakar, Senegal. The Inter-Utility Memorandum of Understanding committed the electricity companies of the region, as the constituent members of the WAPP, to work together to develop the interconnections. A second MOU was also signed at that time, between the transmission system operators in the member states, establishing a framework for cooperation. One of the principles adopted in both of these agreements is "to encourage the prompt settlement of transactions, the efficient development of the WAPP, and the harmonization of legal and regulatory regimes in order to encourage more open and transparent electricity trading within the region and to enforce fair economic electricity trading." Still to come are further agreements such as a commercial agreement governing the operational rules and such aspects as the fees charged for wheeling (permitting electricity from exporting Country A to be transported through Country B to reach importing country C).

As part of the process of creating the WAPP's own institutions, the participants in the WAPP have been eager to learn from the experience of others. At the March 2001 meetings, the WAPP bodies welcomed a delegation from the Southern African Power Pool (SAPP), which shared the experiences from their "loose pool" of 15 countries created in 1995. In August 2001, a delegation from the WAPP attended a SAPP meeting in Lesotho, concluding that a key distinction between the two pools was that the WAPP is being created within the framework and under the guidance of an organization devoted to regional integration (e.g. ECOWAS). A WAPP delegation visited the SAPP's control center in early 2004, which the WAPP team found generally more useful than attending the more formal SAPP meeting.

In September 2001, the Steering Committee began to consider how to take the specific steps needed to promote investment in the energy sector. For example, the ministers discussed the prospect of the WAPP eventually joining the European Energy Charter, an organization comprising more than 50 countries. On a more immediate level, the ECOWAS Executive Secretariat was given the mandate to mobilize financing for the WAPP's interconnection projects.

In April 2002, the WAPP took several further important steps, with the ministerial-level Steering Committee taking 3 resolutions related to the following: the WAPP's guiding objectives; its membership[4] and eventual permanent organizational structure; and on the creation of a regional regulatory body. The permanent organizational structure will

[4] On April 5, 2002, in Accra, Ghana, Resolution N°2 of the WAPP Steering Committee defined *membership* as follows:

> Membership consists of all entities, public or private, who own or operate major generation or transmission facilities in the region, who are physically interconnected and have an impact on system operation in the ECOWAS region. Distribution companies and large energy consumers also have right to be members of the system. The membership as a whole constitutes *The General Membership*. The General Membership is the highest authority of the WAPP.

include a general assembly of members, an executive board, at least three standing committees (technical committee, planning committee, and dispute resolution committee). The day-to-day functioning of the WAPP will be the responsibility of a general management office, with divisions for dispatching, finance and payments, and engineering and planning, among others. According to the Steering Committee's resolution, the regional regulatory entity is to be created by April 2005 and will have very specifically defined authority governing international transactions. Until such a regional regulatory body becomes operational, the ministerial-level Steering Committee will carry out the regulatory function.

**The ECOWAS Energy Protocol Provides a Legal Framework for Investment**

In January 2003, the heads of state and government signed the ECOWAS Energy Protocol, setting up the legal basis for facilitating trade and investment in the entire energy sector. Providing a secure legal framework for investment in energy, the Energy Protocol is a new annex to the 1993 Revised ECOWAS Treaty. In a region often characterized as unattractive to investors due to the non-transparency of investment conditions, the Energy Protocol opens the door to the local and foreign investment needed to make the WAPP and other West African energy projects a success.

Based on the European Energy Charter originally designed to promote investment and trade in energy across Europe and the former Soviet Union, but adapted to West African circumstances, the ECOWAS Energy Protocol covers a wide range of legal and commercial aspects promoting security for investors. For example, the Energy Protocol provides for the free repatriation of capital, protections against nationalization, free selection of key staff without nationality requirements, and legal recourse in the event of unfair meddling by government officials or industry regulators. Perhaps most importantly, the Energy Protocol enshrines the principles of "open access" to national transmission grids and "free trade" across West Africa in all kinds of energy.

The ECOWAS Energy Protocol was expected to be ratified by the national parliaments over the course of 2003, but action at the national level has been slow, if not glacial. Nevertheless, the terms of the Energy Protocol are accepted by all and already have some legal standing within the region. As the WAPP bodies continue their efforts to present a focused, coherent and comprehensive menu of priority projects in energy generation and transmission to local, foreign and multilateral investors, the ECOWAS Energy Protocol provides a familiar and welcoming legal context.

**Establishment of the ECOWAS Energy Information Observatory**

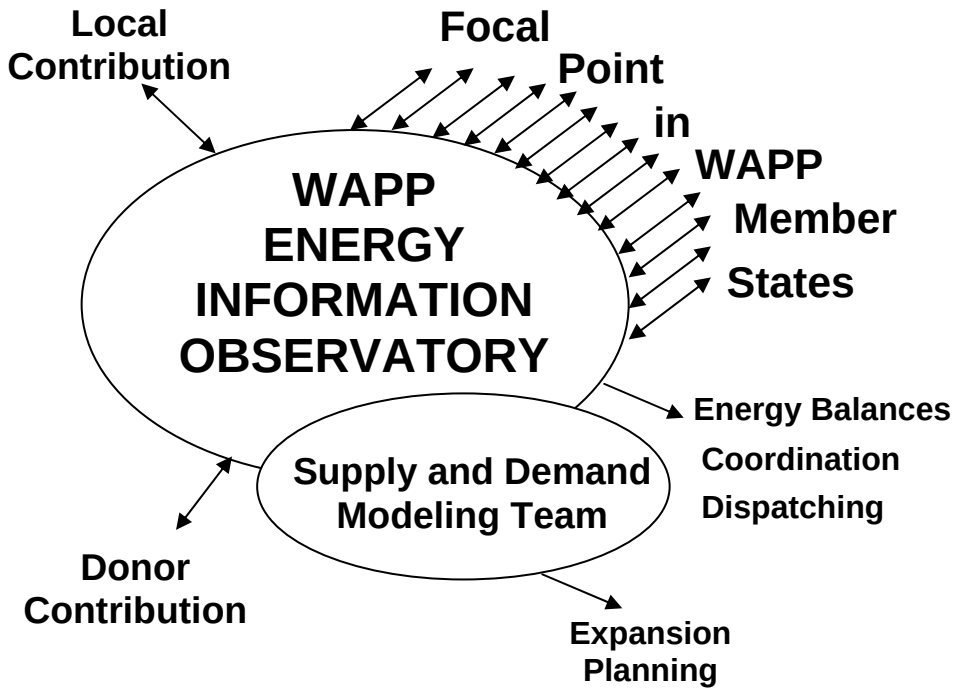
Operating a region-wide electricity market, open to free trade and unfettered investment, requires the creation of an information center to monitor developments and, eventually, to provide dispatching services. To serve these purposes, the ECOWAS Energy

Information Observatory was launched in Cotonou, Benin in February 2003, with plans for it to become operational in late 2003, funding permitting.

Based at the headquarters of the Communauté Electrique du Bénin (CEB), itself a multi-country organization distributing energy within Benin and Togo, the WAPP Energy Observatory is set to benefit from substantial local contributions by CEB, Togo Electricité, and the National Electric Power Authority (NEPA) of Nigeria. USAID and the French Cooperation are discussing ways to support the Energy Observatory, which ultimately will be self-supporting by means of a small fee assessed on all cross-border electricity trading within the region.

Initially, the main tasks of the WAPP Energy Observatory will be to collect monthly energy supply and demand balances, provide forecasts of potential energy surpluses available for trading, coordinate maintenance schedules, and engage in long-term generation and transmission capacity expansion planning. With plans in place for direct links to focal points in each member state, the Observatory should have access to the electricity companies' data and information, even in real time eventually. The long-term planning task of the Observatory will benefit from the work undertaken to date on the WAPP supply and demand optimization model, developed by Purdue University and AIRD through USAID financing. The Observatory staff is to include three West African modeling specialists trained in updating, running and interpreting the results of the WAPP model (Figure 4).

**Figure 4**



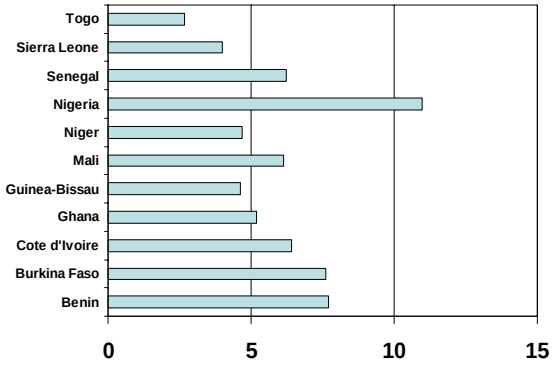
The first permanent body of the WAPP, the Energy Information Observatory can serve as a focal point for investors interested in the WAPP. As a collection point for information on existing and proposed electricity projects in West Africa, the Observatory could become a unique resource where investors can learn about and compare the relative attractiveness of different investment opportunities and find the answers to questions about resource endowments, regulations, and contact information. In early 2004, the Observatory Coordinator was formally selected and the recruitment process was started for two electrical engineers who will become the permanent staff of the Observatory.

**West Africans Now Modeling Future Electricity Sector Development**

The WAPP has actively sought to endow itself with the analytical and operational tools to run a modern power pool. Under a USAID-financed program, the electric utilities in 14 different West African countries are now actively using a sophisticated computer model, developed by Purdue University, designed to simulate the trading of electricity across borders and offer insight into the most economical investments.

**Figure 5**

**Annual Growth in Electricity Demand 2003-2012**




Source: WAPP Data Set #6, January 2003.

The model provides for least-cost optimization of existing plant and new investment in order to help the region's electricity companies to meet forecast electricity demand (Figure 5). As can be seen in the figure, demand is expected to grow briskly in most countries of the WAPP, with the fastest growth in demand expected in the countries hooking up to the West African Gas Pipeline. The modeling results offer estimates of the total cost for operation of the regional grid and show that openness to trade can lower costs by 20%.

The initial data collection activities, conducted by West Africans themselves, resulted in 2000 in the first-ever regional data base for the electricity sector. In 2001, the project provided 3 laptop computers, specially-equipped with the Purdue model and commercial mathematical software, to modeling specialists at the ECOWAS Executive Secretariat

and the representatives of the WAPP's Zone A and Zone B. In mid-2002, the 3 West African modeling specialists visited Purdue University for intensive training in the operation and interpretation of the model. In early 2003, the project team successfully transferred the newly-developed, user-friendly model Interface to technical specialists in every WAPP member state.

Now that the technology has been transferred within a structure guaranteeing its use in electricity planning and government policy making, the upcoming work program involves an emphasis on the continuing transfer of skills, and the modeling functions, to West Africans. The 3 modeling specialists, who are now completely responsible for the annual data collection activities, will undertake wider dissemination of the model and its results through visits to the member states. The 3 modeling specialists are now responsible for conducting the modeling analysis, running several scenarios requested by the WAPP member states, such as contingency planning in case West Africa suffers one of its periodic droughts.

**The Dynamic Stability Study**

One of the real benefits of a power pool is greater system reliability through adoption of mitigation measures against the collapse of the system. Such steps can include technical coordination, agreement on technical rules, the linking of dispatch control centers, and even simply the fostering of a common understanding by the member utilities of each others' organizational structures and operating procedures.

The USAID-financed consulting team engaged in undertaking the dynamic stability study for the West African Power Pool is well-along on its task of recommending specific actions to enhance the overall reliability and performance of the WAPP interconnections. For example, they highlighted congestion along the key existing lines from Côte d'Ivoire across Ghana and Togo to Benin as a potential breakdown point in the system. As part of this activity, there will be a new WAPP Master Plan, updating the original 1999 plan for generation and transmission expansion in the 14 participating ECOWAS member states.

Development of the first PSLF model for West Africa is complementary to the WAPP supply and demand optimization model developed in cooperation with Purdue University and AIRD.[5] The WAPP Technical Working Group is wisely taking steps to provide itself with the necessary licences for the optimization model in order to fully conduct sensitivity analysis. There is a need to ensure the full transfer of the West Africa GE-PSLF model as well, as the WAPP engineers are fully capable of operating it. The Technical Working Group will also examine the results of a simulation using the Elfin

[5] The Positive Sequence Load Flow software was developed by the U.S. firm General Electric and is licensed commercially. The supply and demand optimization model developed in collaboration with Purdue University is an economic and financial model, providing long-term scenarios on optimal methods of expansion of generation and transmission facilities. The GE-PSLF model takes into account operational requirements for dispatch and system stability.

model, as an input into the new version of the WAPP Master Plan.[6] The WAPP, in its process of system development, can only benefit from considering different analyses and perspectives on such key interconnections as Nigeria-Benin (linking the largest generator and user of energy with the Benin-Côte d'Ivoire trunkline) and Mali-Côte d'Ivoire (linking Zone A and Zone B).

As with the optimization modelling efforts, the energy demand forecasts provided by the WAPP member utilities are again coming under close scrutiny. Most of the energy forecasting models in use rely on expanding in an economically and technically optimal fashion in order to meet forecast demand. In other words, energy demand is an exogenous variable and the models build enough capacity and transmission lines to meet the fixed level of demand. The WAPP Technical Working Group has on several occasions expressed its eagerness for technical assistance to transfer greater capacity in improving techniques for energy demand forecasting. A further priority involves improving the incorporation of *unserved energy* (non-grid electricity supply, for example through small-scale backup generators) into the modelling and planning.

**Progress Towards a Regional Regulatory Agency**

Rules regarding the regulation of cross-border exchanges of electricity are being developed at a time when the WAPP member states are in fact in the process of developing their own national regulatory bodies, covering all public services, not just electricity. At the WAPP meetings in Conakry, Guinea in October 2002, the WAPP Steering Committee comprised of the ministers of energy of the ECOWAS member states took on provisional responsibility for regional regulation of the WAPP.

The WAPP's present two-phase plans are to establish a small regional regulatory agency (RRA) to regulate cross-border trade in electricity. Of course, the importance of the RRA will grow as trading in electricity increases with the building of the WAPP priority projects for interconnecting the national grids. Building on a USAID-financed study presented in April 2002, and a 2003 diagnostic study of the regulatory systems in place in the WAPP countries financed by the Agence Française de Développement (AfD), the initiative will define the role and responsibility of the WAPP RRA vis-à-vis national regulatory bodies.

The first phase, lasting 36 months, will see the definition of the RRA's statutes, procedures and financing mechanisms as well as training in pilot projects covering audits, benchmarking, mediation and capacity building. The second phase of 24 months will see the actual establishment of the RRA, when responsibility for regulating regional trade in electricity will be transferred to the RRA.

[6] Elfin, developed in the late 1990s by the Environmental Defense Fund, is an optimization model offering production cost estimates for different expansion options. The Elfin model results should be able to provide useful comparisons with the results obtained from the supply and demand optimization model already in use by the Technical Working Group.

## A Common Approach to Environmental Impact Assessment

Environmental impact assessment (EIA) is an accepted practice in the WAPP countries, especially on large-scale energy projects. A newer technique, social impact assessment, is now also increasingly practiced, particularly on donor-sponsored projects. Common rules on EIA (and SIA) will ensure the equivalence of environmental protection across West Africa and perhaps even lead to the development of West African firms skilled in rendering EIA and SIA services.

In April 2004, the ECOWAS Executive Secretariat presented draft ECOWAS Directives for the evaluation of the environmental impact of energy generation and transmission projects to the WAPP Technical and Institutional Working Groups. National environmental officials from the different West African countries also took part in this review. The Directives were amended and adopted by the WAPP Technical and Institutional Working Groups, which recommended that they immediately apply to all electricity generation and transmission projects throughout the ECOWAS sub-region.

The two WAPP working groups recommended that the WAPP Steering Committee create a WAPP Environmental Committee. The Committee would serve as a review board for monitoring environmental impact studies for the WAPP priority projects, helping to harmonize EIA procedures, and environmental norms and standards related to electricity across West Africa.

## Donor Support Has Been Critical to the WAPP

While the WAPP has without doubt been an African-conceived and African-led initiative, support from the donor community has been essential both in helping bring the West Africans together and in helping them consider what type of pool arrangements to set up. While the donors are committed to helping the WAPP for the next few years, it will be necessary for the WAPP to develop its "own resources" in order to operate the WAPP bodies, such as the Energy Information Observatory.

USAID has taken the lead among the donors in providing technical and financial support to the WAPP, enabling the ECOWAS Executive Secretariat and the member states to rapidly develop, consider and adopt such steps as the ECOWAS Energy Protocol. Through the end of 2002, USAID had devoted $2.75 million in technical assistance help for the WAPP, with a commitment of another $3 million through 2005. On April 5, 2002, ECOWAS entered into a partnership for information exchange with the Indiana Utility Regulatory Commission, through the Energy Partnership Program funded by USAID and administered by the U.S. Energy Association (USEA). This partnership has involved 4 executive business trips (2 in the U.S. and 2 in Africa) to date, and allowed members of the Project Implementation Committee to see directly how the U.S. system works. A new cooperative agreement between USAID and USEA will permit further visits and even closer cooperation between the U.S. and WAPP in the coming years.

Under its new approach for lending on regional integration projects, the World Bank has made the WAPP its °1 priority for West Africa. In essence, loans can now be made to national governments for the segment of an international transmission line lying within its territory. The World Bank is preparing a 4-year preparatory phase to contribute to the institutional and regulatory development of the WAPP, to be followed by a lending facility worth roughly $150 million. The World Bank is also envisaging a new rural electricity component of the program, so that the poorest do not get left behind.

The African Development Bank (AfDB) has for several years reserved 10% of its lending for regional projects. The AfDB has announced that it will finance the key transmission line linking Nigeria with the Benin/Togo grid operated by CEB and is examining whether to finance the line between Côte d'Ivoire and Mali.

The French Ministry of Foreign Affairs and the French Development Agency have also been active supporters of the WAPP, contributing expert participation in the different WAPP meetings. France has expressed interest in supporting the work of the ECOWAS Energy Information Observatory and supporting member countries in their efforts to integrate regional interconnection into their national energy development policies. The European Union has contributed at times as well, providing support for organizing the regional WAPP meetings.

The Kuwait Fund for Arab Economic Development has also been active in the WAPP. This bilateral donor has agreed to provide a loan for construction of the first phase of the transmission line between Prestea (Togo) and Volta (Ghana).

**The WAPP Brings a New Spirit of Cooperation to West Africa**

Success in regional integration requires close contact and trust among decision makers from the different countries involved. Prior to the WAPP, access to energy sector information in the different West African countries was problematic at best. The WAPP data-gathering activities have resulted in increasingly reliable data and statistics on the electricity sector. In the past, it was exceedingly difficult to find comprehensive information country by country, let alone for the region as a whole. Now, since the national delegations from the energy ministries and electricity companies must contribute their information to the common WAPP database, the national-level picture is far clearer than ever before. There has been a laudable spirit of "open information" in the WAPP, which bodes well for closer cooperation in the future.

The West African electricity sector officials are also starting to benefit from simply knowing each other better. Since 1999, the WAPP has brought together officials from the West African electric utilities and ministries of energy, usually for the purpose of considering common policies or approaches to providing more reliable electricity at low cost. Based on this example, the managing directors of the WAPP's Zone A utilities now meet regularly on their own initiative, without assistance from the U.S. or other donors.

These executives, who together with Project Implementation Committee members from Zone B have visited U.S. independent transmission system operators, power plants, regional dispatching centers, and regulators at the state and national level through the USAID-supported Energy Partnership Program, recognize that they are playing a critical role in developing a West Africa-wide market for electricity. For this reason, and to improve their company's performance, they are now closely cooperating and consulting with each other on such aspects as planned maintenance schedules, water availability for hydroelectric power, expansion planning, and clearing accounts.

**Bringing Zone B Projects to Fruition**

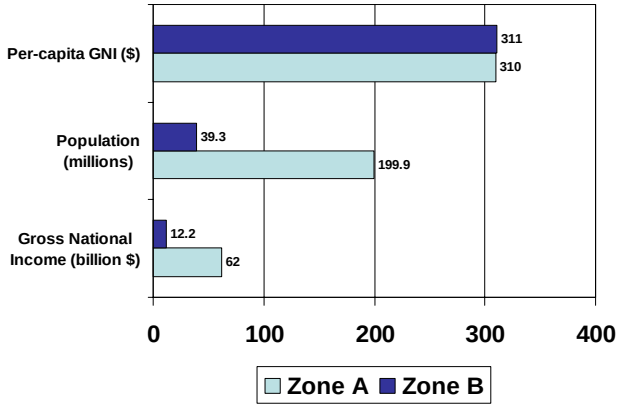
Zone B is beginning to catch up to the Zone A countries in terms of organizing and presenting their potential investment projects. The investment prospects for the countries of Zone B have been sadly lagging behind. In October 2002, the ECOWAS Ministers of Energy called for immediate action to close the gap in energy sector development between the two zones. With the help of USAID, the Zone B countries are currently finalizing the detailed terms of reference for a new package of Zone B priority projects, aiming to present the international community of private sector and multilateral investors with a menu of bankable projects primed for success.

While admittedly the majority of the WAPP countries are least-developed, the Zone B countries have smaller economies and smaller populations (Figure 6). While the level of per-capita income is nearly identical when comparing the 7 countries of Zone A with the 7 of Zone B, the true difference emerges when examining an indicator such as the Human Development Index (Figure 7).[7]

[7] Developed by the U.N. Development Program, the Human Development Index takes into account a series of variables such as life expectancy, infant mortality, and the like.

**Figure 6**

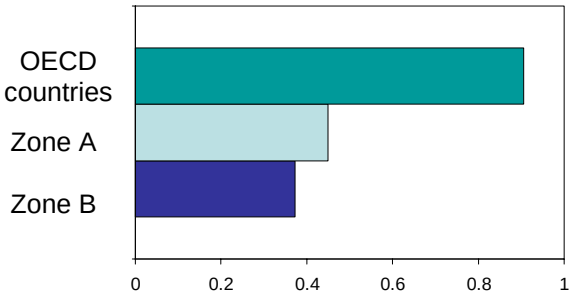
## Zone B Countries Have Smaller Economies, But Are Not Necessarily Poorer Per-Capita




Source: World Bank, World Development Indicators 2003.
Gross National Income is also known as Gross National Product.

**Figure 7**

## Zone B Countries Do Lag Behind on the Human Development Index




Source: UNDP, Human Development Report 2003.
Population-weighted average HDI. Zone B excludes Liberia.

Zone A boasts the three wealthiest countries (Nigeria, Ghana, Côte d'Ivoire) and the greatest natural resources in energy (natural gas and petroleum in Nigeria, natural gas in Côte d'Ivoire, and Ghana's Volta River hydroelectric facility). With a few exceptions, the Zone B countries are notably lacking in natural energy resource endowments. The opportunities that do exist for energy sector development within Zone B countries are increasingly taking on a regional or multi-country perspective, bolstered by the technical expertise of two sub-regional organizations, the *Organisation pour la Mise en Valeur du Fleuve Sénégal (OMVS)* and the *Organisation pour la Mise en Valeur du Fleuve Gambie (OMVG)*. As a result, the Zone B countries are enjoying unprecedented cooperation amongst themselves to develop optimal solutions for new electricity generation and transmission facilities, while at the same time respecting environmental and social concerns.

By presenting investment opportunities within the regional context, the Zone B countries are offering investors a larger market of consumers in order to more easily recoup long-term costs. The success of the Manantali Dam project (shared by Mali, Senegal and Mauritania) serves as an example for all of Zone B. Since early 2002, the Manantali project ("Three Countries, One River, One Project") has greatly improved energy reliability in the Malian capital of Bamako and helped relieve some of Senegal's energy deficit. Expansion plans for this OMVS project include two new hydro plants at Félou and Gouina and a new transmission line taking the southern route for a more-direct connection to the Senegalese capital Dakar (to date nearly entirely dependent on high-cost diesel-burning plants).

The other main priority projects for Zone B include different hydroelectric opportunities in Guinea (Fomi, Kaléta, and Sambangalou), and the Bumbuna hydroelectric project in Sierra Leone, which, combined with new interconnections, will eventually provide electricity to more than one country in the region. For example, in order to provide a new source of energy supply to Guinea, Mali and Côte d'Ivoire, the governments and utilities involved have agreed to undertake joint development of Fomi in Guinea and Kénié in Mali, a multi-use project featuring improved electricity, irrigation, and navigation. The WAPP Ministers of Energy met in October 2003 in Dakar, along with representatives of the main international aid donors, and were overall quite pleased with the detailed terms of reference for these different priority projects. The next step would be to launch a coordinated campaign to attract investment.

Placing an invigorated emphasis on Zone B in many ways constitutes a new poverty-oriented focus for the WAPP. With the Zone B countries' public sectors and electric utilities becoming increasingly well-organized, focused around a region-wide solution to chronic energy deficits, the prospects for lighting up the poorest countries have never been brighter.

**The Overall Investment Climate in West Africa**

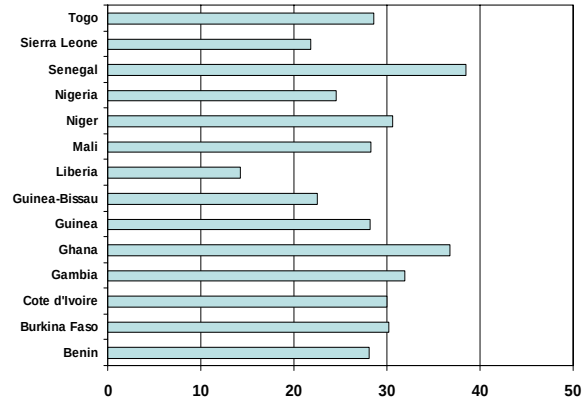
Expansion of the generation and transmission facilities in the 14 WAPP member states to meet forecast demand over the next 10 years is expected to cost about $15-17 billion. At least half of that investment can be expected to come from private sources, with the remainder from national government and multilateral financial institutions. But is it realistic to expect that level of new investment and financing to be available to the WAPP?

Based on examination of a number of risk factors, the WAPP countries will need to make a great deal of improvement in their underlying investment environments in order to attract substantial private capital from foreign and local investors. There are a number of measures available to gauge the attractiveness of the investment environment. Amongst the ECOWAS countries, only Senegal is given a sovereign long-term debt rating (B+) by Standard & Poor's.[8]

[8] Another major ratings service, Moody's, doesn't rate any of the ECOWAS countries.

**Figure 8**

Country Credit-Worthiness Rating



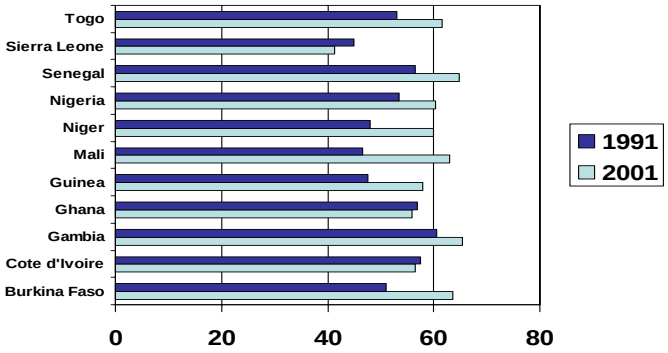

Source: UNCTAD World Investment Report 2002.


Another measure, provided by the firm Euromoney, offers an indication of credit-worthiness based on such factors as debt, economic performance, political risk, and access to financial and capital markets (Figure 8). Whereas OECD members typically score above 90 on the credit-worthiness scale (0-100), none of the 14 ECOWAS countries listed even reaches 40. Several other countries in Africa, such as Botswana (65), South Africa (53) and Kenya (48) are considered more credit-worthy than any of the ECOWAS countries.

According to the PRS Group's rating of political, financial and economic risk, only one of the 11 ECOWAS countries rated scored in the "very high risk" category (below 50). None of the ECOWAS countries came close to approaching the "very low risk" category (80 or higher), but a few countries' ratings are over 60 and therefore could be described as approaching "moderate risk." What is particularly notable is the improvement in the perception of risk in West Africa over the past decade (figure 9).

**Figure 9**

**Nearly All the ECOWAS Countries Have Improved Their Risk Rating**




Source: UNCTAD World Investment Report 2002.
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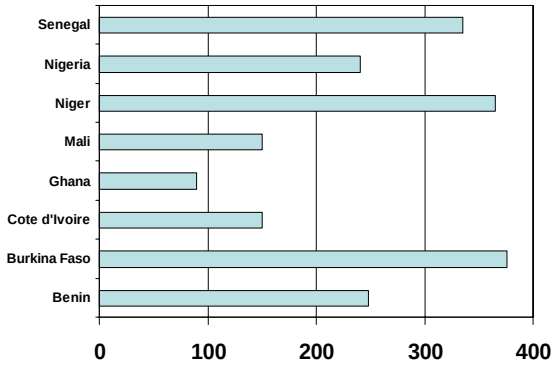
[The higher the rating, the lower the risk.]

The degree of risk is of obvious concern to potential investors, but the relative difficulty and cost of doing business every day represent other intangibles. Overly lengthy procedures for starting a business can discourage local entrepreneurs from joining the formal sector and gaining improved access to capital. A lack of domestic credit and stringent collateral requirements are testament to the limited financial depth and efficiency of these economies. The relatively high number of days needed to enforce a contract (in case of non-performance) in several of the WAPP countries illustrates the difficulty of doing business (Figure 10). Any and all of these aspects may scare away foreign investors.

**Figure 10**

**Time Required to Enforce a Contract[1] (in days)**




Source: World Bank, World Development Indicators 2003.

[1]Refers to the number of calendar days from the moment the plaintiff files the lawsuit in court until the moment of final determination, and, in appropriate cases, payment.

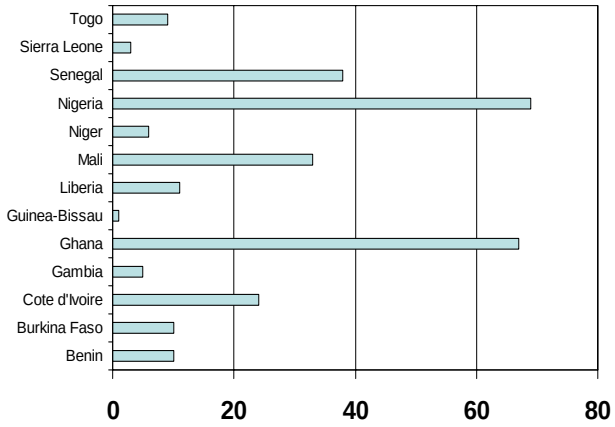
Obviously, work to improve the investment climate is essential. Nevertheless, West Africa does attract new foreign direct investment (FDI) of approximately $1.8 billion per year.[9] Multinational corporations often take it as a positive sign that other multinationals are present in a particular country. Figure 11 showing the number of foreign corporate affiliates in place suggests that many investors find West Africa an attractive place to set up shop. Beyond the obvious appeal of certain natural resource endowments (for example, mining), some of the more appealing aspects of the region for investors are the rapid pace of economic growth, fast-growing populations and consumer base, and the drive towards regional integration.

Of course, the ECOWAS countries are competing against other regions of the world in the fight to attract investment. They are also likely competing against each other, when it comes to individual investment decisions. Those countries that take rapid action to address weaknesses in the overall climate for business and investment are likely to garner investor approval more quickly than those that lag behind.

[9] Figure is that for 2001, the most recent year reported. The share of the FDI inflows destined for Nigeria, which typically represented about 80% of total FDI coming into the WAPP countries during most of the 1990s, has declined to about 60% since 2000. Data are from UNCTAD's *World Investment Report 2002*.

**Figure 11**

**Number of Foreign Corporate Affiliates**




Source: UNCTAD World Investment Report 2002.

The investment climate for energy is mutually-dependent upon the overall economic and business climate, as the former needs customers and the latter needs power. But beyond improving the overall investment climate, what will it take to improve the prospects for energy sector investment in particular? Sustained vigorous electricity demand, based on rapid growth in production and consumption of goods and services, is one favorable element already in place. Transparency and predictability in the operation of the region's electric utilities could be equally important, since the picture now is often muddy at best. The WAPP could help matters by developing common rules or guidelines in such areas as billing, metering, clearing accounts, regulation, operational rules (when to shut-off), financial reporting, take-or-pay contracts, power purchase agreements, and the role of government versus industry, among others.

## Next Steps

Without question, the West African Power Pool has made substantial progress during the first 4 years of its development. Regional cooperation on electricity has fostered a tangible spirit of cooperation among the electricity companies and national ministries involved, with unprecedented sharing of information. In electricity, the WAPP member states are displaying a high level of confidence in their neighbors, a key ingredient for improving energy security throughout the region.

With the WAPP now entering the latter part of its transitional phase, three key areas for future progress stand out:

- Find financing for priority projects
- Create permanent institutions
- Endow the WAPP with its own resources

Attracting investment is front and center on the WAPP's agenda. Progress on the Zone B priority projects has revolved around defining "bankable" projects and developing the information and materials needed by investors. In addition to its information-gathering functions, the ECOWAS Energy Information Observatory is likely to become a natural point of contact for investors from outside the region to learn more about the investment opportunities. The time may be ripe for organizing an investors' conference that would showcase progress and possibilities for investing in the WAPP.

As for creating permanent institutions, the WAPP bodies have laid out the path to follow, but much hard work remains. For example, establishing the regional regulatory body will require clearly defining where the authority of the regional regulator begins and that of the national regulators ends.[10] Finalizing the remaining agreements needed for operation of the WAPP, such as the commercial agreement, will also require some hard bargaining amongst the WAPP members. To date, the primary motor driving the WAPP has been the ECOWAS Executive Secretariat. Shifting the expertise and dynamism emanating from the ECOWAS Secretariat to the WAPP's permanent bodies, such as the executive board and general management office, is another important challenge.

The sustainability of the WAPP depends on its independence. The fast start in developing the WAPP has been reliant on donor funding both for conceptual and practical help. The best way of ensuring the WAPP's sustainability would be to endow the WAPP with its own resources, for example via a small fee on international transactions or a generalized fee on all electricity served within any of the WAPP countries. Advance planning ahead regarding how to muster resources needs to start soon.

In addition to solid progress in these areas, the WAPP will likely need to address such additional questions as how to link rural electrification and economic development[11], how to expand participation by women electricity officials in the WAPP, and how to bring civil society more actively into the WAPP's deliberations. Clearly, in West Africa, the bright lights are shining on the electricity sector now that the WAPP is open for business.
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[10] Beyond institutional arrangements, it is important that "regulatory divergence" not become a potential non-tariff barrier to trade in electricity.

[11] A project linking economic activities to multifunctional electricity platforms under a World Bank Learning Loan in Guinea may provide a model for the other WAPP countries.